

**GENERAL
INSTRUMENT**

VIDEOpal™ Order Recorder

Programmers

| <u>Programmer</u> | <u>Satellite/Transponder</u> |
|---------------------------|------------------------------|
| First Run | G2/4 |
| Viewer's Choice I | G3/21 |
| Viewer's Choice II | G3/16 |
| Cable Video Store | G3/5 |
| Home Sports Entertainment | F1/10 |
| Home Team Sports | F4/22 |
| Prime Sports | F1/24 |
| Prime Ticket | F1/7 or F4/20 |
| Pro Am Sports | S3/21 |
| Sunshine Network | F1/11 |
| Midwest Sports Channel | W5/20 |
| Tuxedo Network | G2/10 |

Coming In October

The Drive-In Cinema
Rendezvous
Madison Square Garden

The New VC II Plus

New VideoCipher technology opens the option for upgrading.

Surely, satellite TV receivers had gotten as good as they could get, with on-screen displays, "help" screens, favorite-channel recall and parental lockout.

But now, a new option has come along to increase your viewing pleasure even more.

Since early 1986, more than 50 popular satellite TV channels, including HBO, The Disney Channel, Lifetime and The Nashville Network, started using General Instrument's VideoCipher II system. All you need to get this programming is one VC II descrambler or IRD and a subscription to the channels you wish to receive.

Recently, General Instrument (GI) developed a more advanced version of the VideoCipher II descrambler system, called the VC II Plus. The sophisticated VC II Plus features higher security and will allow you to subscribe to more channels and access more programming, including additional pay-per-view TV channels and special events.

Beginning this month, most, if not all, new integrated receiver/descramblers (IRDs) and stand-alone descramblers will have VC II Plus. Some models even have built-in Videopal pay-per-view order recorders that offer instant access to pay-per-view events. With a Videopal you can see first-run movies, live boxing and wrestling matches, concerts and special events at the touch of a button.

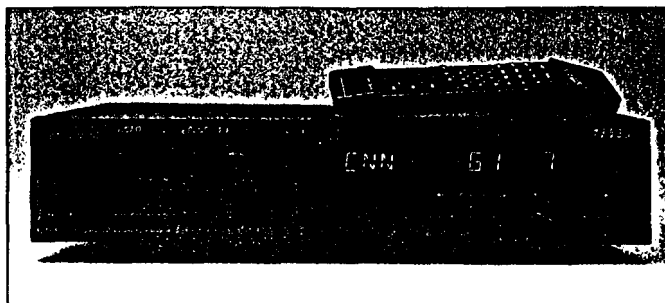
EASY UPGRADE

You don't have to go out and buy a new receiver to upgrade your current system. Every stand-alone descrambler and IRD that uses the original VC II is compatible with VC II Plus.

If the descrambler or IRD was purchased prior to January of this year, it most likely has an original VC II circuit board module that can be

upgraded. Dish owners can easily tell if their descrambler or IRD has an original VC II module or if it has a new VC II Plus. Somewhere on the front of the unit is a VideoCipher II logo. If the logo only reads **VideoCipher II**, it has an original VC II module. But, if it reads **VideoCipher II Plus**, it has the new module.

All the upgrade requires is



► General Instrument's VideoCipher II Plus.

switching the existing VC II circuit board with a new VC II Plus module. Dish owners can switch the modules themselves, but it's highly recommended to have a professional satellite equipment retailer do it. Upgrading existing stand-alone descramblers and IRDs *does not* void the warranty. Dish owners or satellite equipment retailers must return the old, original VC II module to General Instrument.

Contact your local satellite equipment retailer or call GI's hotline at (800) 344-6754 for more information about upgrading your receiver.

SPECIAL MODULE OFFERS

If you are considering upgrading your system, there are a number of special offers, including a module exchange program run by GI.

Dish owners who have a Videopal that was authorized before May 21, 1990, will receive a new VC II Plus module at GI's expense. According to Esther Rodriguez, General Instrument's vice president of Programmer/Studio Relations and Service, GI will be contacting Videopal customers

over the next several months. There is no need to make any phone calls or write in for this offer.

The GI Videopal offer is also good for dish owners who purchased a Videopal prior to May 21, but have not authorized and used the unit.

"If they [dish owners] have proof of purchase that the unit was bought prior to May 21, 1990, we will provide them with a VC II Plus upgrade module," says Rodriguez.

If you are considering buying a Videopal now, your stand-alone descrambler or IRD must have the VC II Plus module. But you can upgrade your system and get the Videopal PPV order recorder at a discount through GI for \$159 to \$179 with a one-year warranty. This offer also includes \$85 worth of pay-per-view programming and various other discounts.

American Programming Service, a national subscription programming supplier, also has a special

offer that provides customers with a free VC II Plus module and an instructional installation videotape.

"The only prerequisite is that the consumer subscribe through APS," says company president Mike Mountford. APS does not require the purchase of any additional services in order to take advantage of this offer. If you've already purchased programming through APS, you can renew your existing package for the following year and still qualify for this offer.

For more information, call APS at (800) 365-4293.

Dish owners who do not want to take advantage of these current special offers but still want to upgrade their systems can purchase a VC II Plus module for \$129 through General Instrument's module exchange program. Contact your local satellite equipment retailer or General Instrument for more information about module exchanges.

More VC II Plus upgrade specials are likely to be announced soon. *Satellite ORBIT* will cover the offers in What's New on page B2. ■

HOW TO SUBSCRIBE

| PACKAGE/NETWORK | SERVICE | COST | PHONE |
|---|---|--|---|
| American Exxtasy | Adult Programming | \$150 per 6 months/\$240 per year \$480 per 2 years & 3rd year free | 1-800-824-2454 1-212-696-4111 (NY) |
| American Programming Services | Movies On Satellite Sports On Satellite Kids On Satellite News & Info On Satellite Variety On Satellite | \$299/year \$174.95/year \$84.95/year \$98.95/year \$144.95/year | 1-800-365-4293 |
| Cox Satellite Programming | Flexible basic pkgs. of 8-21 channels— Superstations & premiums | Basic pkgs. start at \$7.95/month | 1-800-444-9293 |
| Disney Channel | Family Programming | \$89.40/year (8.95/mo) | 1-800-3-DISNEY |
| FAM | Family Programming | \$15/year | 1-800-843-9266 or 1-800-247-6217 |
| First Run | Pay-per-view | \$4.49-\$4.99 per movie | 1-800-345-1386 |
| HBO/Cinemax | Premium Channels | \$12.95 a mo/\$116.55 a yr for 1 service \$19.95 a mo/\$179.55 a yr both services | 1-800-HBO-DISH |
| | Flex-Pak Package | \$25/yr 1st chn., \$12/yr ea additional chn. | |
| Home Dish Only | Stardust Theatre | \$65/year | 1-800-433-7519 |
| Netlink One Stop Programming™ | ABC(KUSA), NBC(KCNC), CBS(KMGH), PBS(KRMA), WGN, KWGN, AMC, CNN, Headline, ESPN, USA, FAM, X-PRESS, X-Change, Lifetime, Weather, TBS KTLA, WSPK, WWOR Premium Channels | \$10-14/month basic pak \$36/yr Call for pricing & availability | 1-800-642-8080 or 1-800-542-7889 (WA) |
| NPS | Pick-a-Pak* | \$8.50 - 179.55 VC II— \$299 with selected programming | 1-800-444-DISH |
| NSOA | Premiums, Sports and Basics VCII with purchase of package | Call \$370.00 includes Shipping & Handling | (800) 446-6702 (National) (805) 688-8210 CA |
| One-Stop Satellite Programming* | TBS, USA, WSBK, KTLA, WWOR FAM, Lifetime, Weather, Stardust, American Exxtasy, Tuxedo Star Pack™ (Stardust & 8 basics) VCII's Available | 1st basic \$19.95/yr., each additional basic \$10.00/yr. (USA not available a la carte) Stardust \$85.00/yr \$144.95/yr | 1-800-US-SPACE 1-800-877-7223 |
| PrimeTime 24 | ABC (WABC), CBS (WBBM), NBC (WXIA) | \$49.95/yr; \$90.00/2 yrs; \$130.00/3 yrs | 1-800-248-2844 (212) 599-4440 |
| Programmers Clearing House | Over 45 channels available. VC II & remote also available | Packages start at \$139.00/yr A la carte channels start at \$19.95/yr. | 1-800-338-9486 |
| Programmer's Warehouse | Complete Programming Service Discount packages for all 50 states | \$20.00 and up | 1-800-327-4101 1-314-327-7110 (MO) Mon-Fri 8:00 a.m. - 9:00 p.m. (CT); Sat & Sun Noon-7:00 p.m. (CT). |
| *Rural TV Package | CNN, CNN Headline, ESPN, FAM, WGN, WPIX, KTVT, USA, Lifetime, Nickelodeon, Nostalgia, TNN, Learning, Weather and Travel Channels, CMTV, PrimeTime 24, Skyline Silver, Netlink Super Six, TBS, HSE, HBO, CINEMAX, Disney, Starion | Call for competitive pricing Local service. Monthly rates | Look in the Yellow Pages for your local Rural Electric or Telephone Co-op |
| Satellite Source, The | Basics Packages (10 channels) HBO & Cinemax, Others | Call for competitive pricing. VC II for \$299.00 with purchase of premium | 1-800-366-2525 1-303-792-9992 |
| Satellite Sports Networks | Primeticket, HSE, HTS, Sunshine Network, PASS, Prime Sports Network Sports pay-per-view | \$95.40/yr. | 1-800-447-3669 |
| Stardust PPV | Pay-per-view Movies & Sports | Call | 1-800-433-7519 |
| Superstar Connection | WGN, WPIX, KTVT, KTLA, WSBK, FAM WWOR, Starion/Lifetime, Weather Channel, USA, SSN, PrimeTime 24 | Prices start as low as \$15 per year. Call for free information on combination and package pricing. | 1-800-CALL-SSC (225-5772) Ext. #33-24 Hours |
| TCI Satellite Services | 16 Channel Basic Premiums | \$10.50/mo \$6.50/mo (18.95 w/o Basics) | 1-800-877-DISH 1-800-877-3474 |
| Turner Home Satellite | TNT, CNN & Headline News FAM, TWC, HBO, MAX | \$15-210 Package & a la cartes | 1-800-843-9266 |
| United TVRO Association | Premium Channels, Superstations, FAM, ESPN | Call \$25 annual fee | 1-800-544-0788 1-800-322-TVRO (MI) |
| Viacom Satellite Networks, Inc. (Showtime-Movie Channel) | Showtime, TMC, Playboy, MTV, Nickelodeon, ESPN, VH-1, FNN, USA, FAM, Discovery, TNN, Lifetime, TLC, The Weather Channel (Viewer's Choice I) | Showtime, TMC, Playboy or basic: \$120/yr; \$10.95/mo Showtime & TMC: \$186/yr; \$16.95/mo Showtime & basic or TMC & basic; \$192/yr; \$17.95 mo Showtime, TMC & basic: \$240/yr; \$22.95/mo Usually \$4.95 per movie | 1-800-422-9013 |

*In order to be eligible, you must live in the packager's franchised areas or an area serviced by a Rural Electric or Telephone Co-op. Check your yellow pages. Note: All of the above services use the VideoCipher II.

VC II programmers 1987

Letter from the Publisher

Welcome to the premier edition of the *Satellite Pay-Per-View Guide*!

In many ways, the launch of this magazine signals an exciting new era for satellite dish owners. For some time, you have been able to purchase some pay-per-view (PPV) programming and special events in advance by telephone. For big events, such as wrestling and boxing matches, that often meant hundreds of dish owners trying to get through at the last minute.

You can now *throw your telephone away*.

Though some of the services carried in this guide may be available on a limited basis for a while by calling ahead on the telephone, all of the programs listed will be instantly available with the touch of one button on your VideoPal ordering unit. And no longer will you have to worry about running out to the video store, which may be miles away, to rent movies. With the VideoPal, you can simply push a button and rent movies—months ahead of their appearance on regular pay-TV channels—from the comfort of your easy chair.

What's even more exciting is the number of PPV choices you will now have. In fact, you, the satellite dish owner, will have access to more PPV programming and special events than any other TV viewers in the nation.

The concept behind pay-per-view programming is simple: you pay for only those programs you watch, when you want to watch them. To help make your programming decisions, you will need a separate satellite guide which lists your PPV choices in an easy-to-use and understandable format.

A quick glance of our highlighted prime-time viewing sections will enable you to instantly find out what the world of pay-per-view has to offer. And since we have the most up-to-date and comprehensive satellite pay-per-view listings available, you can plan your entire month's PPV viewing in just a few minutes.

In the months ahead, we'll update you on the latest additions to the satellite PPV line-up, paying particular attention to special events such as boxing, wrestling, and concert events. The year ahead promises to be the most spectacular ever for special PPV events.

Pay-per-view and the VideoPal have now made the world of satellite TV even more dazzling. We are pleased to be your guide through this exciting new frontier and hope you will let us know how we can make satellite pay-per-view even more enjoyable in the months and years ahead.

Bob Scherman
Editor and Publisher

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Ordering Pay-Per-View is a Snap With your VIDEOpal™ Order Recorder



Easy Ordering Instructions

1. Choose the Pay-Per-View channel you wish to watch among the Programmers listed on the opposite page.
2. Press [] on your remote control or keypad and read the name of the current program, the time remaining and the price.
3. Press [] to order the program. Then press [] again to confirm your order*. That's all it takes!

1. Choose the Pay-Per-View channel you wish to watch among the Programmers listed on the opposite page.
2. Press [] and read the title of the next program, the amount of time before the program begins, and the price.
3. Press [] to order the program, and press [] to confirm your order*. Should you decide not to view the program, just change the channel before the program starts and your order will not be recorded.

*Some brands of satellite receivers may require one more step in the ordering process.

1. Press [] , then [] . The screen will display the last 14 events ordered and viewed, program titles, the dates and times watched and the program price. This is an easy tool to use when reviewing your monthly bill from the Satellite Video Center.

You may prevent unauthorized persons from ordering Pay-Per-View events by setting a password. Here's how:

Just press [] , then [] and follow the instructions on the screen.

Friendly Customer Service 1-800-54-VIDEO

If you have any questions about using your VIDEOpal system or about your programming bill, call the Satellite Video Center at 1-800-54-VIDEO between 9:00am-7:00pm PST Monday-Friday or 9:00am-4:00pm Saturday. They're your Pay-Per-View Customer Service experts just a touch away!



S V C

To use your VIDEOpal for the first time, please call the Satellite Video Center at 1-800-54-VIDEO to set up your account. This will only take a few minutes. The Satellite Video Center will charge a one-time \$10.00 account setup fee which will appear on your first bill. The one-time fee gives you access to over 10 channels. (Other services charge even more for just one channel). Thereafter, you only pay for what you order plus a small service fee of \$1.25, only for the month that you order. If you don't order and your account is current, you won't get a bill.

Chris Johnson
7204 South Yarrow Street
Littleton, CO 80123

January 11, 1990

Mr. Ed Gibbons
Federal Communications Commission
7435 Oakland Mills Road
Columbia, MD 21046

Re: Complaints Against General Instrument Video Pal

The Video Pal is a modem used to connect the Video Cipher II satellite TV descrambler to the telephone lines to enable the customer to order pay-per-view movies and special events. Data in the horizontal blanking interval of the scrambled TV signal is decoded by the VCII and is graphically displayed on the TV screen to inform the customer as to the current and next pay events. The customer orders the current or next event by depressing keys on the VCII. During off-hours, the Video Pal auto dials the General Instrument authorization center and downloads data concerning which events the customer watched that day for billing purposes.

I have logged the following complaints concerning the Video Pal:

1. An undetermined number of Video Pals was made available to the public at low cost to promote the product on its introduction. These units do not have a part 68 label, do not have a part 15 label, do not have part B, and do not have an FCC ID number. I have received permission from the following owners for you to contact them to verify these discrepancies:

Ms. SuzAnne Baechler
Macon, Missouri
(816) 385-2221 (Please note that this number is unlisted)

Mr. Jim Finney
Bucklin, Missouri
(816) 695-3509

Mr. Craig Stoddard
Syracuse, Indiana
(219) 594-2226

All the above listed owners have reported some degree of interference with normal telephone operation after installation of the unit. In some cases, the unit has to be disconnected from the telephone line in order to use the regular telephones.

2. The Video Pals now on sale at all General Instrument dealers across the country do not have a part 15 label, do not have part B, do have a part 68

label, and do have an FCC ID number. When I reported this number to you, however, you told me that it was a "bogus" number. For your reference, the fake FCC ID number is F2N6L8-17288-MD-R. I have personally read this number from a unit in a dealer's showroom and have had the identical number reported to me by three owners. The owner's manual with these units does not require the owner to contact the telephone company with the REN number and FCC ID number before installation, does not prohibit use on a party line or pay telephone, does not restrict connection to type RJ-11 phone jack, and does not restrict the data cable to shielded only. I have received permission from the following owners for you to contact them to verify these discrepancies:

Mr. Charlie Wells
Woolridge, Missouri
(816) 839-2206

Mr. Donnie Edwards
Fort Worth, Texas,
(817) 799-6672

Ron and Sue Habegger
Chicago, Illinois
(708) 672-6677

Mr. Wells has reported interference with normal telephone operation with his unit.

3. As you know, modems must incorporate a 2 second or greater billing delay timer to permit telephone company computers time to log the call for billing purposes. The Video Pal does not incorporate a billing delay timer in its design. Conversation with General Instrument technicians has established that General Instrument is aware of this. Several consumers have told me that GI technicians were proud of the fact that, "The Video Pal connects so fast that the 'phone company never even knows it made the call". As I'm sure you are aware, several thousand modems making free calls every day will cause the telephone companies to lose large amounts of revenue. Since GI appears to be aware of the problem and has done nothing to correct it, I think a good case could be made for "Fraud By Wire". My personal observation of a unit in operation convinces me that there is no billing delay timer in the unit.

Please feel free to contact me at any time should you require clarification or further information. You may telephone me at (303) 973-8201. Please keep me advised as to progress or the lack thereof and the final disposition of this case. I have had worse than no luck with previous complaints through the regular channels.

Sincerely,


Chris Johnson

FEDERAL COMMUNICATIONS COMMISSION
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, MD 21046
January 19, 1990

31010.0

Mr. Chris Johnson
7204 South Yarrow Street
Littleton, CO 80123

Dear Mr. Johnson:

In response to your letter of January 11, 1990, concerning marketing of equipment by General Instrument, please be advised that the equipment is subject to computing device regulations in Subpart J, Part 15 of the Rules. The equipment is a Class B computing device subject to verification, pursuant to Section 15.834(c). Verified equipment, whether Class A or B, is prohibited from carrying a label showing a FCC ID. The compliance statement specified in Section 15.836(c) is optional for Class B verified devices. However, an instruction manual advising users of the interference potential is required to be provided with all computing devices sold. The text of the notice is specified in Section 15.818. Compliance testing of verified equipment is required prior to marketing.

The number (F2N6L8-17288-MD-R) referred to as a FCC ID in your correspondence appears to be a registration number assigned by the Common Carrier Bureau to equipment registered under Part 68 of the Rules. The number should be preceded by the term, "FCC Registration No.", pursuant to Section 68.300 of the Rules. This office is not in a position to advise whether the number is a valid registration number. However, if it is a valid number, the first three digits, F2N, identify the grantee as Cable Home Communication Corporation, 6262 Lusk Blvd., San Diego, CA 92121. Pursuant to Section 68.218, the grantee would be the party responsible for compliance of the equipment with Part 68 technical specifications.

The enclosed copies of the applicable Part 68 rules pertaining to labelling, user instruction and notification to telephone companies of registration numbers and REN numbers may be helpful in assisting you in determining whether the items mentioned in your correspondence are compliant with the rules.

We are contacting Cable Home Communications Corporation for a copy of the Part 15 verification report for our review. Since your complaint concerns many technical matters that are encompassed by Part 68 regulations, we are

Mr. Chris Johnson

2.

forwarding a copy of your complaint to the Federal Communications Commission, Common Carrier Bureau, Domestic Services Branch, Room 6008, 2025 M Street, N.W., Washington, DC 20554, to the attention of Mr. William vonAlven, (202) 634-1833, for any their review.

Your interest in writing to the Commission is appreciated.

Sincerely,

Ruby N. Moore

Ruby N. Moore
Communications Analyst
Equipment Authorization Branch

Enclosures

Part 15 and Part 68 reprints

cc:

Domestic Services Branch.

w/copy of incoming

The Video Pal is a device manufactured by General Instrument Corporation (GIC) to enable a Home Satellite Dish (HSD) owner to order pay-per-view movies and special events. The device connects to the owner's satellite system and telephone lines and communicates via the telephone lines to a central billing computer to record pay-per-view events ordered by the customer. Since the device is similar to devices used by computers to communicate via telephone, it is subject to verification and registration by the Federal Communications Commission (FCC). Several owners of the Video Pal noted that their unit did not have the required FCC registration labels attached. Several owners complained that their unit interfered with normal telephone operation when attached to the telephone line.

I. On January 11, 1990, Mr. Chris Johnson submitted a complaint to the Authorization and Evaluation Division of the FCC on behalf of these Video Pal owners. The complaint alleged:

1. A number of Video Pals were in the field without FCC required labels.
2. A number of Video Pals caused interference with normal telephone operation.

II. On January 19, 1990, the Authorization and Evaluation Division transferred the complaint to the Common Carrier Bureau, Domestic Services Branch.

III. Subsequent investigation by the Common Carrier Bureau found several thousand Video Pals without FCC registration labels. These several thousand units are in violation of Section 68.300 of the FCC rules.

IV. The Common Carrier Bureau obtained a sample Video Pal from GIC and tested it for telephone line interference. No interference was caused by the sample unit. Subsequent complaints from owners of Video Pals has caused the bureau to re-investigate the Video Pal in terms of potential interference to normal telephone operation.

V. On October 24, 1990, Mr. Johnson contacted the investigating engineer at the Common Carrier Bureau and expressed frustration that no action had been taken to recall the Video Pal, since it was clearly in violation of FCC regulations. He also asked why no penalties were levied against GIC. Mr. Johnson was told to contact the Enforcement Division of the Common Carrier Bureau.

VI. On October 26, 1990, through October 31, 1990, Mr. Johnson and several concerned consumers contacted the Enforcement Division and asked that action be taken on Mr. Johnson's January 11th complaint. The contact at the Enforcement Division was extremely uncooperative, gave conflicting statements to various complainants, refused to record the names of several complainants, and finally refused to take any action whatsoever and referred all complaints back to the investigating engineer at the Common Carrier Bureau.

VII. On November 1, 1990, Mr. Johnson contacted the investigating engineer at the Common Carrier Bureau and related the actions taken by the Enforcement Division. Mr. Johnson was told that all enforcement is done by the Enforcement Division and if they refuse to enforce, then nothing can be done.

Your Address

Date

RECEIVED

JUL 1 1991

Senator/Congressman -----

His Address

His Address

Dear Senator/Congressman -----:

FCC MAIL BRANCH

I am writing to ask your help in a very important matter. General Instrument Corporation manufactures and markets the Video Pal, a device that allows the Home Satellite Dish owner to order pay-per-view events on his satellite system. Several Home Satellite Dish owners have complained to the Federal Communications Commission that many of the units do not carry the required FCC labels. Several users have complained of interference with their telephones caused by the Video Pal. Investigation by the FCC has uncovered several thousand unlabeled units. The FCC is still investigating complaints of interference.

I need your help to get the FCC to take action. The FCC has investigated and verified our claims. The Video Pal clearly violates Section 68.300 of the FCC rules and may violate Section 68.218. As you know, these rules are designed to protect the consumer from inferior equipment that interferes with other equipment in the consumer's home. The only way we can be protected is to get the FCC to enforce existing rules and regulations. As the attached "HISTORY OF COMPLAINTS AGAINST THE VIDEO PAL" shows, we have spent a very frustrating eleven months trying to get the FCC to enforce existing rules and regulations.

Please use the power of your office to contact the FCC and require them to enforce the law. The FCC should require General Instrument to:

1. Recall ALL Video Pals and correct the design so that they no longer interfere with home telephones and make certain all proper registration and certification labels are attached.
2. Pay appropriate fines and penalties as spelled out in the FCC rules.

The consumer should not have to bear ANY of the costs involved for the recall.

Thank you in advance for your help in this important matter.

Sincerely;

Your Name

THE VIDEOCIPHER II 2100E. GOOD LOOKS, ENHANCED FEATURES, AND REMOTE CONTROL.

Remember the good old days? You just turned on your TV and satellite receiver and you had a world of entertainment on your screen.

Then came scrambling.

For a few minutes it looked like your world was about to get a little smaller. But like we said, it was only for a few minutes. Because our award winning VideoCipher® II 2100E Satellite Descrambler, with its sleek new design and wireless remote-control, quickly followed.

And now you can descramble as fast as they can scramble. With the ability to process up to 240 channels, the 2100E brings the world back to your television.

But the 2100E is more than just a bare-bones, practical necessity. It has enhanced video performance for a sharper picture. Plus digital stereo audio so your favorite shows sound as good as they look.

What's more, the 2100E is one of the easiest to use components that you ever plugged into a wall. It has video instructions that appear right on your TV screen to teach you how to operate its functions.



"1984 Emmy Award"

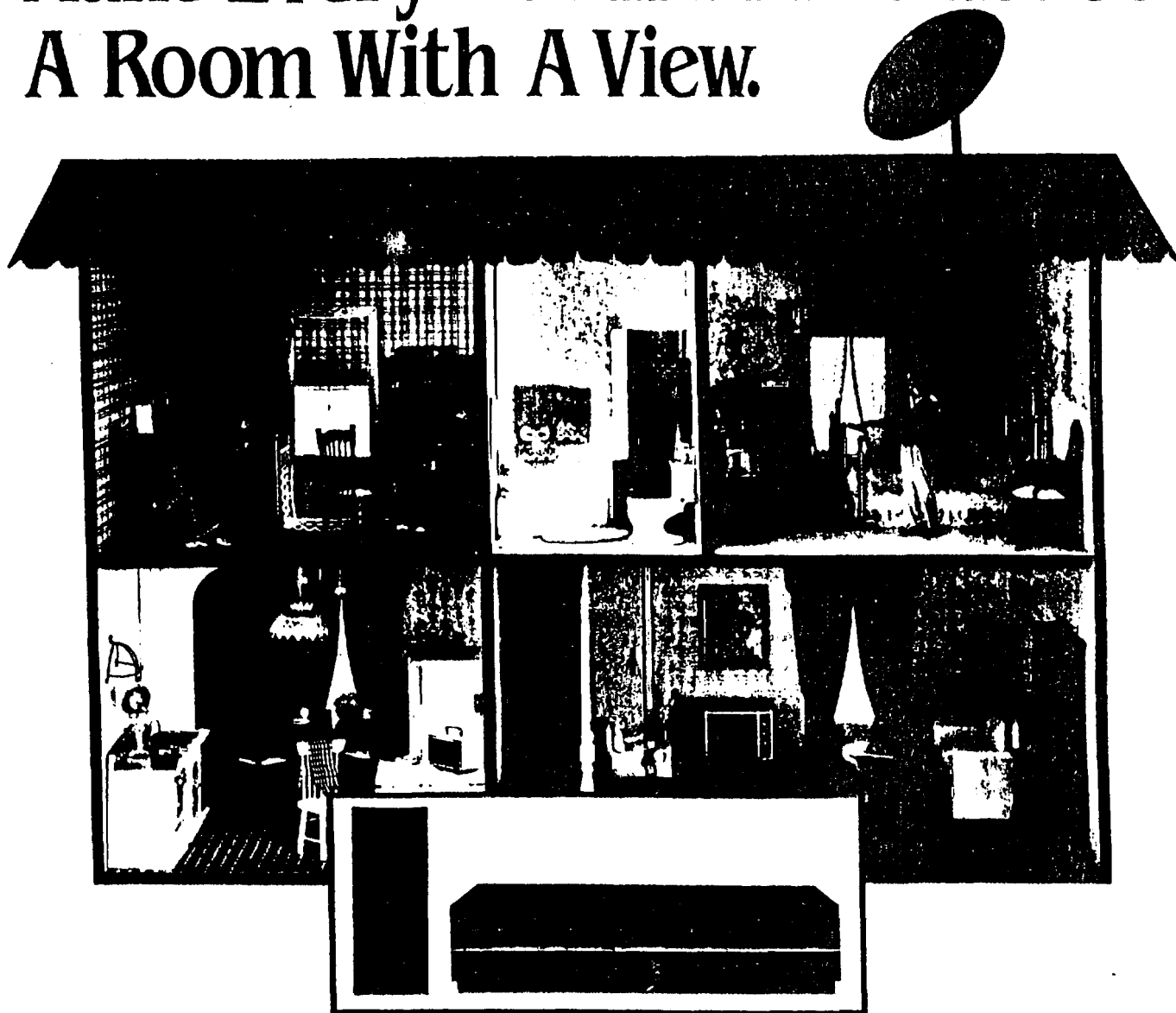
The only thing left to do is to picture yourself at the nearest General Instrument VideoCipher dealer buying your 2100E Satellite Descrambler. You'll never miss another scrambled feature film, sporting event or entertainment special again.*

GENERAL INSTRUMENT

VideoCipher® is a registered trademark of General Instrument Corporation, 1375 Lenoir Rhyne Boulevard, Hickory, North Carolina 28601. (704) 324-2200. © 1986 Cable/Home Communication Corp.

*"Proper authorization is required to descramble satellite television signals."

Make Every Room In The House A Room With A View.



Offer your customers the only satellite receiver they'll need for their home. The Panasonic® CRD-4500 Integrated Satellite Receiver/Descrambler/Antenna Positioner. It makes every room in the house a room with a view.

With a full function UHF remote, the CRD-4500 can be controlled from as far away as 150 feet (unobstructed distance). So additional TVs located

throughout the home can be connected to a single CRD-4500. Maintaining complete remote control of all functions including VideoCipher® II Descrambler¹ modes and antenna positioning.

The fully integrated CRD-4500 offers a host of added features and functions designed for ease of use and high performance. Like on-screen display, programmable satellite memory and surround sound circuitry

to name a few.

The Panasonic CRD-4500. Once your customers see it, they'll want every room to be a room with a view. For more information call Panasonic at (201) 392-4804/4108.

¹ VideoCipher is a registered trademark of General Instrument Corporation

Panasonic

Video Communications

Available at:

- | | | | |
|--|--|--|--|
| Bellis Electronics, Inc. North MS, West TN, Northwest AL (901) 925-3000 | Best Reception Systems, Inc. North AR, East TN, Northeast AL, South KY (615) 523-4913 | CVS Systems, Inc. IN, IL, South MI (317) 662-0037 | DSI Distributing TX, OK, IA, MO, KS, NE, MN, SD, ND (515) 986-3236 |
| First Carolina Satellite Dist. NC, SC, VA (919) 779-0273 | Microdish Incorporated OH, WV, West PA, North KY (614) 385-3200 | National Satellite Communications NY, ME, North NJ, CT, RI, NH, VT, MA (518) 383-2211 | New World Satellite Equipment WI, North MI (608) 647-4131 |
| Recreational Sports & Imports WA, ID, CA, NV, UT, WY, OR, AK, MT (208) 523-5721 | Satellite Earth Stations of LA., Inc. CA, FL (318) 468-2203 | Sun Satellite Systems, Inc. DE, East PA, South NJ, MD (717) 272-2064 | QDI AZ, NM, CO (602) 252-1183 |
| | | | Wright Technology Marketing, Inc. LA, South MS, South AL, South AR (601) 545-2545 |

PERFECT INTEGRATION OF RECEIVER & DESCRAMBLER INTO ONE UNIT WASN'T EASY.

OPERATING IT IS.

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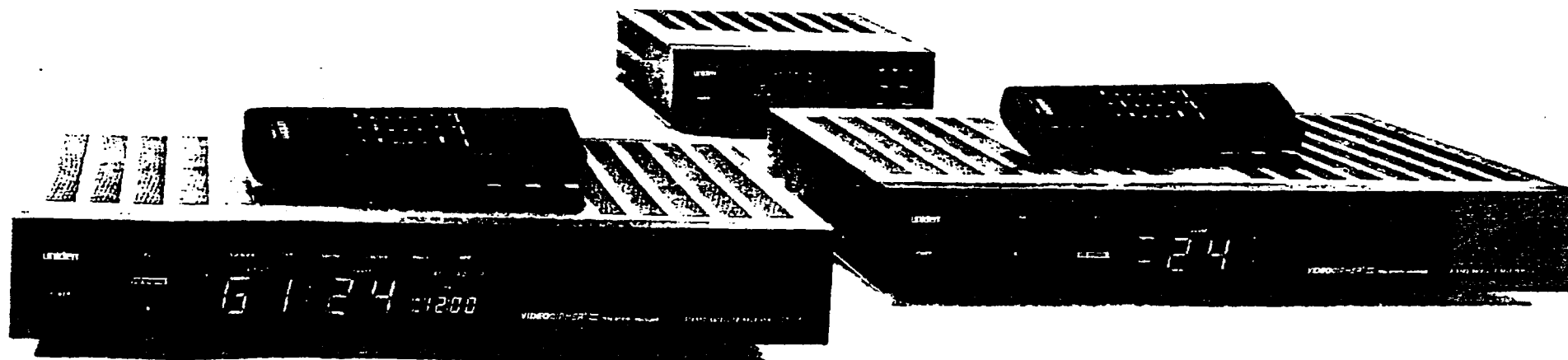
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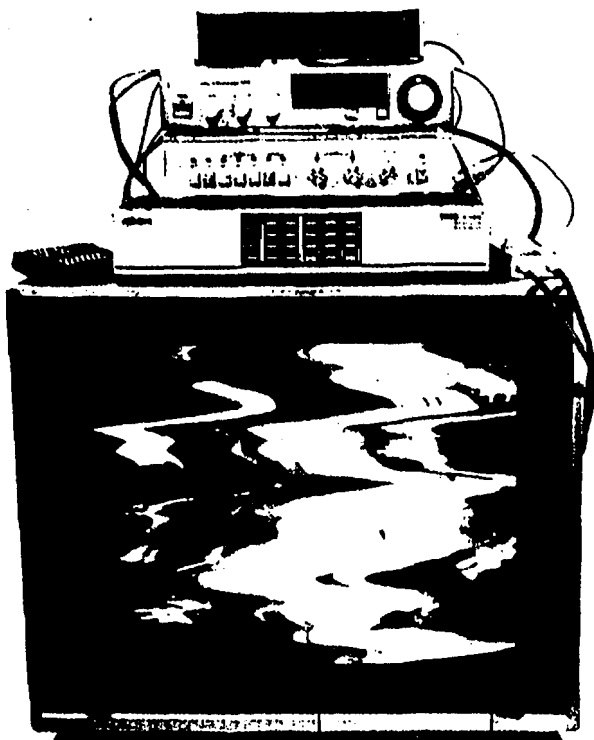
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Too Complicated**



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**Video
Review
WINNER**

It surges and sputters, surges and sputters. General Instrument has technological talent but managerial deficiencies.

The company that can't keep up the pace

By James Cook

THERE ARE LONGWAVE and short-wave growth companies, just as there are longwave and short-wave business cycles. IBM and Hewlett-Packard are longwave growth companies. New York-based General

Instrument Corp. is your prototypical shortwave growth company. Three times now in the past 20 years it has latched on to new technologies, only to see each of them peter out in fairly short order.

Its first wave of growth carried it to a record \$426 million in sales in fiscal

Perry Allen Warner



General Instrument's Frank Hickey
When what goes up comes down. . . .

1974 (ended Feb. 28) but its mélange of radio and tv components, semiconductors and cable tv equipment sputtered out, and by fiscal 1976 General Instrument's sales were off 12%, its earnings a good 48%.

Frank G. Hickey, who took over as chief executive in November of 1974, oriented the company's semiconductor operations toward the hotshot videogame business. At the same time, General Instrument's cable television equipment lines—including set-top cable television converters, cable systems and the like—cashed in on the expanding cable television boom. Between the 1979 and 1983 fiscal years the company's earnings shot up 200%, to \$102 million, on a 77% gain in sales (to \$974 million). Its once doggy common went from 13½ in 1978 to a 66½ 1983 high.

But the boom didn't last, and Hickey rode the roller coaster back down again. Between 1983 and 1986 (again fiscal years) General Instrument's sales fell 18.5%, to \$794 million, and carried the company \$47 million into the red. The stock plunged from its high of 66½ to 12½.

The videogame business went as quickly as it came, while the cable television business stalled as the cable companies, rather than expanding their markets, turned to restructuring into cable giants like Tele-Communications, Inc., American Television & Communications and Comcast. Thus ended the second growth wave.

Hickey moved quickly to rebuild the company. He scrapped a hodgepodge of unrelated electronic businesses and began acquiring others for the future. Along the way he wasted some \$29 million on a scheme to set up a satellite pay television system that never found its market. But he hit the jackpot with the 1986 acquisition of M/A-Com's coaxial cable and video scrambling and decoding equipment businesses.

The timing was perfect. As pay tv broadcasters began scrambling their signals to home satellite dishes, decoders were suddenly hot. General Instrument had the best decoders in the business and a near monopoly, to boot. Better still, with the industry shakeout at an end, the cable television companies had begun expanding their systems again.

Wave three. Earnings were up 266% in fiscal 1988, another 29% in fiscal 1989, for the biggest if not the best year in the company's history. Its stock price came back, too—from a 1985 low of 12½ to a recent high of 37½ on a spate of takeover rumors.

At the same time, however,

al Instrument was demonstrating the difficulty of regaining momentum once lost. Hickey tried hard to recover General Instrument's atrophied position in the booming state lottery business (FORBES, Mar. 6). Building on the skills it had developed in its AmTote pari-mutuel horse betting business, General Instrument had pioneered computerized lottery systems in the late Seventies, and then in the mid-Eighties lost at least five rebids to competitors like Bally and Gtech (FORBES, Jan. 23). Hickey decided to try to buy his way back into the market, and, primarily through bidding low, won contracts in Israel, Quebec, Missouri and Connecticut.

That assured General Instrument fourth place in the business. But the price was high. In Missouri it underestimated the sales Missouri's restrictive lottery regulation made possible, and lost its shirt. In Connecticut a series of computer glitches shut down part of the system for a considerable time and on one occasion even permitted winning tickets to be sold after the winning numbers had already been announced.

Donaldson, Lufkin & Jenrette analyst Eric Buck calculates that General Instrument lost over \$31 million in its lottery operations in fiscal 1988, another \$16 million or so in fiscal 1989, and the division may or may not make it back into the black this year. But General Instrument's credibility has certainly been damaged, and Buck has expected Hickey to cut his losses and cash out, something Hickey so far has not managed to do.

Meanwhile, demand for General Instrument's decoders—perhaps 15% of operating profits—seems to have peaked out. Scientific Atlanta, the industry's number two producer, has been cutting into its cable equipment business, especially in the higher margined addressable set-top converters that GI had monopolized for years.

In all, analyst Buck has scaled back his earnings estimates for the year—from \$3 to \$2.80.

Not surprisingly, some people have come to the conclusion that General Instrument could do better with a change in management. Here is a company that again and again surges, only to sputter out a few years later. As if to forestall a takeover, the company in June announced a Dutch auction to buy in 20% of its outstanding shares. The move may reduce the shares that are available to a takeover artist but it won't do much to cure the persistent managerial problems in the face of a clear technological proficiency. ■

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Product Showcase

THE VIDEOCIPHER II 2100E

The decoder has changed but standard features remain.

The VideoCipher II decoder is sporting a face-lift. With the introduction of General Instrument's new model—the 2100E—the “box with buttons” look of the older model is gone, along with its silver tone. The gray 2100E is designed more like a VCR and, unfortunately, is nearly as big. Like the model it replaces, the 2100E takes up a fair amount of space in your home entertainment system.

General Instrument has made changes inside the decoder as well, to prevent unauthorized reception of scrambled programming. But users won't notice, as the VideoCipher 2100E performs the same functions as the older model—with one key difference, a much-needed remote control.

The previous model was available in two versions, but the new unit should help eliminate any confusion over what decoder you need for a given satellite system. The former VideoCipher 2000E and 2000E/B versions were designed for compatibility with most of the satellite receivers on the market. The 2000E/B, as the additional letter indicates, was for use with block downconversion satellite systems and could only operate properly if the receiver provided an unfiltered, unclamped (base-band) video signal. The more versatile VideoCipher 2000E, which wasn't always available, could be used with either block downconversion receivers or with a single conversion downconverter receiving a 70-MHz intermediate frequency signal. Now, only the 2100E decoder will be available. Like the 2000E, it functions with either kind of receiver input.

EASY HOOK-UP

Connecting the VideoCipher 2100E to your satellite system is no problem; it's the same procedure used to hook up the 2000E. All necessary cables are included in the package, and the unit has all the outputs for plugging into a variety of auxiliary equipment. The left and right channel audio outputs are for connecting a stereo amplifier or a stereo VCR, and the

VideoCipher's digital audio provides sound reproduction that rivals that of compact disc players. The decoder's radio frequency (RF) output can be switched to channel three or four for connecting the TV's antenna terminals. The decoder's antenna input will accept signals from either a VHF/UHF antenna or a cable converter at the push of a button. Once connected and tuned to a VideoCipher



▶ VideoCipher 2100E

channel, the decoder is ready to use. If a problem occurs, the help button will display on-screen instructions.

The 2100E has two jacks on the rear of the unit. Labeled Data and IPPV, these jacks are for the future addition of an impulse pay-per-view module, which viewers can use to purchase programming on a per-view basis. Reportedly, the module will contain a telephone modem that allows the decoder to communicate directly with the authorization computer.

FINALLY A REMOTE CONTROL

When the first VideoCipher II hit the streets over a year ago, the system offered some valuable features not previously available. The most unusual of these were, and still are, the “view” and “next program” features. By pressing the view button, the name of the current program and the time remaining appears on the screen. The next-program button displays the name of the next program scheduled to appear, along with the time remaining in the current program. In the older version, viewers had to get up off the couch to push the buttons. For owners

who thought about getting a long stick, the 2100E has a welcome solution: a 21-button remote control with buttons identical to those on the front panel.

The 2100E also retains other special features unique to VideoCipher. The rating ceiling, for example, allows parents to limit the type of programming their children may watch. Unlike many parental lock-out controls available in satellite receivers—which lock the antenna on a single satellite or lock out all channels on a given transponder—the VideoCipher system locks out only the specific programs chosen. Kids vastly prefer it to a unilateral lock-out of services. Some parents, however, may have wished for improvement on one aspect of the rating ceiling feature. To implement the lock-out, a password or code must be entered that is from one to eight characters long. If the password is subsequently forgotten, the rating ceiling cannot be lifted except by calling the programmer to send special codes to the unit.

The 2100E can also receive teletext transmitted by the programmer for screen display. Currently, the text feature is used to offer viewers information about scrambling. But programmers could send messages, news items, even full-length articles about programming or current events. Then, too, the system has a provision for sending messages to specific subscribers, should a programmer wish to contact you about billing or anything else that pertains only to you.

While the VideoCipher 2100E provides the same features as the older models, the manufacturer has also incorporated some changes that users won't see. To deter tamperers seeking unauthorized programming, General Instrument has added new hardware and changed the software that programs the unit. Any attempt to modify the 2100E for illegal reception could reduce the \$395 decoder to a piece of junk.

—Jerry Poyser

DX Communications, Birdview, and General Instrument. These IRDs are available now or will be soon—contact your dealer for information.

MANUFACTURERS TEAM WITH DISCOUNT SATELLITE PROGRAMMING

A free year's subscription to at least 20 scrambled and soon-to-be scrambled channels is being offered with the purchase of all Echostar and Houston Tracker integrated receiver/descramblers (IRDs) in distribution by June 30, 1987. Echosphere Corp., Houston Tracker Systems, and Turner Broadcasting System, Inc. (Discount Satellite Programming) announced the joint promotion at the March SBCA/STTI show.

The Discount Satellite Programming package includes: Arts & Entertainment, Black Entertainment Television, CBN Cable Network, Country Music Television, CNN, Headline News, The Discovery Channel, ESPN, FNN, Hit Video USA, The Nashville Network, NETLINK USA, PrimeTime 24, SuperStar Connection, WTBS, Tempo TV, USA Network, The Weather Channel, and WOR. While several of these services have not announced scrambling plans, spokesmen said that their inclusion in this package indicates that they will eventually be scrambled.

TIME FOR MAX

ABC's new *Max Headroom* series starts its six-week run on Tuesday, March 31, at 10 pm following *Moonlighting*. For more on Max, see page 37 in *ORBIT*'s feature section.

NEW SERVICES

X*press Information Services, a data text service providing business and financial information for personal computer owners, will be available this fall. Dish owners will need an IBM, IBM-compatible, Apple, or Commodore computer, a VideoCipher II descrambler, General Instrument's InfoCipher component, and a subscription of CNN and Headline News. An additional \$19.95

per month will provide subscribers with X*press Executive, the expanded version of the business and financial information.

Two new foreign-language services are now available in the clear. The RAI/USA Network, which features variety programming in Italian, is on F4, 2, weekdays from 5:30 pm to 7:30 pm and Sundays from 8 am to 2 pm. Spanish news and information is available on HBC (Hispanic Broadcasting Corporation) on W5, 21, weekdays from 5:30 pm to 7:20 pm. HBC plans to expand its broadcast days and hours by fall.

NCN (National Christian Network) is back on the air on W4, 2. The service is broadcasting in the clear from 8 pm to 12 midnight daily and on weekdays from 9 am to 11 am. Daily 24-hour broadcasting will begin April 15.

TLN (The Lifeway Network), a new religious service, will be available in the clear on S1, 21. The service will initially air on Thursdays and Fridays from 7 pm to 10 pm.

The Treasure Channel will be broadcasting a six-part series on sunken-treasure hunting in April, May, and June on W4, 20. Each episode will feature a segment offering viewers a chance to purchase recovered treasure and related items. April's programs air on the 8th and 22nd at 8 pm.

NETLINK USA is now transmitting two new services on F1. KDVR-

Denver on F1, 20, is an independent station featuring variety programming; KSPN-Aspen (Rocky Mountain Super Channel) on F1, 24, features sports and recreational programming.

SERVICE UPDATE

Several of the NETLINK USA services from Denver on F1 have changed transponders. Current transponder assignments are: KUSA (ABC)—F1, 2; KCNC (NBC)—F1, 4; KMGH (CBS)—F1, 6; KRMA (PBS)—F1, 12; KDVR (Ind.)—F1, 20; and KSPN (Rocky Mountain Super Channel)—F1, 24.

The RAI News feed and the Visnews feeds have moved from transponder 4 to transponder 22 on F1.

GalaVision, a Spanish-language service, is now broadcasting 24 hours daily on G1, 20.

North America 1, a radio service featuring easy listening music and dish owner information, has moved to F2, 23, at 6.2 MHz.

The Page Enterprises CART NewStar auto racing broadcasts will now be carried on W4, 19, at 2 pm. April's transmissions occur on the 2nd, 6th, 9th, and 13th.

HDP (Home Dish Programming) has announced that plans to offer a package of four subscriber-supported channels for dish owners have been canceled due to lack of subscribers. Dish owners who sent HDP a subscription fee will receive a refund of \$90.

SPECIAL THIS MONTH IN BIRDWATCHER

YOUR ELECTED OFFICIALS

As a service to *Satellite ORBIT* readers who want to contact their senators, representatives, and governors in support of the new viewing rights bill, we are publishing a complete list of their names and addresses beginning on page B6. Keep this list handy for future reference.

DISH OWNER SURVEY

The Federal Communications Commission concluded recently that the marketplace for scrambled programming and decoders is working. But did the FCC reach its conclusions based on faulty information? To find out, *Satellite ORBIT* is conducting a survey. Please take a moment to fill out the survey card bound into the magazine with the Bookmark at page B1.

tions in Satellite Adviser that some people mix equipment brands in their systems. I have a Birdview multiple receiver system, M series model 20/20, with 3 separate receivers. I would like to add a fourth receiver that costs less than the ones I have. Could you tell me what receivers are compatible with my system?

A. Your system operates with an intermediate frequency (IF) of 950 - 1450 MHz, or what some people call high-block. Just about any receiver that operates at this frequency should work with your system. A number of manufacturers offer compatible receivers with a wide range of features and prices. Check with your local satellite dealers for the one you want.

Q. I recently bought a satellite system. Before purchasing, I was aware that most of the movie channels were scrambled. The information in your publication and the rumors I have heard indicate that the majority of the satellite broadcasts will be scrambled in the future. My questions for you are: What types of scramblers are used for the various services? How do

the scramblers and descramblers work? And where is the best place to purchase a descrambler?

A. Currently, eleven scrambled services are available to U.S. consumers, whether they have one feed, or two feeds like HBO. Several other scrambled services are not available to the backyard dish owner, including WOR, Viewers Choice, Request TV, and the Telstar channel. Viewers Choice is currently testing the pay-per-view capabilities of the VideoCipher II, and if all goes well, this service will be offered to dish owners in the future.

Of the services that plan to scramble in the future, the schedules are not set in stone. CBN, Nickelodeon, MTV, VH-1, ESPN, WTBS, KTVT, WPIX, Disney, Nostalgia, and Lifetime have all announced scrambling plans, which will up the number of scrambled services to 22. But this will not severely restrict the dish owner's choices, as nearly 70 services will remain in the clear.

Although several different scrambling systems are now in operation, the most common is the VideoCipher II system used by the majority of pay services. From the dish owner's perspective, it is desirable to have only one decoder for all scrambled programming. This reduces the number of decoders dish owners must buy and also minimizes technical difficulties associated with multiple decoders, not to mention the clutter in the TV room.

The pay-per-view service First Run uses a different decoder, one manufactured by Sony. First Run sends subscribers its schedule of feature films about a month in advance, and the subscriber chooses from some 15 films costing from \$1.95 to \$4.95 each. When a particular program that the subscriber has ordered is aired, the decoder is activated to allow both viewing and recording of the program.

Another service, After Dark Video, uses a rather old scrambling technology—Telease MAAST. After Dark Video transmits X-rated programming to its subscribers on Friday and Saturday nights. The decoder has a physical key (which is actually a crystal that the subscriber inserts in a socket on the device) that activates the descrambler. For security reasons, After Dark Video changes the key

every two months or so. The new key is mailed to subscribers two weeks before the change is implemented, a procedure that not only prevents unauthorized reception of the service, but also makes it easy for parents to prevent their children from watching X-rated programming. To deactivate the decoder, you simply remove the key.

All scrambling systems prevent unauthorized reception of signals for which programmers are entitled to payment. In a nutshell, the way they work is by altering a critical portion of the video signal that contains both picture and sound information. When received by an ordinary television, the signal is, in effect, scrambled. When received by an authorized descrambler, the altered portion of the signal is restored to its original form.

TV stations on F1, uplinked by NETLINK USA, had switched transponders. KRMA (PBS) was on transponder 6 and KMGH (CBS) was on transponder 22. NETLINK USA was still determining whether or not to uplink WNYW-New York.

SCRAMBLING UPDATE

TSN (The Sports Network) on A1, 2 will be scrambling with the Oak/Orion system in March. The service will not be available to dish owners in the U.S. TSN, part of Cancom's home dish package, will be available only to Canadian residents.

KTVT-Ft. Worth and WPIX-New York will be scrambling with the VideoCipher II system in March. Both services should be scrambled full time in March if no delays occur. Subscriptions to the services are available to dish owners in the U.S. through the Superstar Connection's package. See the Service Subscription chart at the end of ORBIT for more information.

CBN Cable Network, The Disney Channel (East and West), ESPN, MTV, VH1, Nickelodeon (East and West), and WTBS-Atlanta will continue to test-scramble with the VideoCipher II system in March.

The PrimeTime 24 services (WBBM-Chicago on F2, 3; WXIA-Atlanta on F2, 11; and WABC-New York on F2, 23) will begin test-scrambling with the VideoCipher II in March.

The Denver TV stations uplinked by NETLINK USA (KWGN on F1, 2; KRMA on F1, 6; KCNC on F1, 20; KMGH on F1, 22; and KUSA on F1, 24) will begin test-scrambling with the VideoCipher II in March.

SUBSCRIPTION UPDATE

HBO is now offering a less expensive annual subscription for HBO, Cinemax, or the HBO/Cinemax combo. The limited time offer: one of the services (HBO or Cinemax)—9-month subscription for \$116.55, an additional 3 months free; 9-month combo (HBO and Cinemax) subscription for \$179.55, 3 months free.

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could not stabilize the picture with any adjustment I made.

A. The system used to encrypt the Hagler/Leonard fight was Scientific Atlanta's B-MAC scrambling system. B-MAC stands for multiplexed analog component—type B audio. This encryption system is currently recognized as the standard for scrambling business communications and is widely used by major corporations to secure their teleconferences.

Like the VideoCipher II system, the B-MAC system is addressable. But there has been much debate over which system is better and which should be adopted as an encryption standard for the delivery of direct-to-home satellite broadcasting (DBS). The VideoCipher II is the current de facto encryption standard for satellite delivery of programming to U.S. cable companies and to dish owners. But the same system won't necessarily be used in the future to deliver satellite programs and information directly to the home and the office. With the growing interest in expanding DBS services, many people believe

that the satellite industry and regulatory agencies should come to a quick decision on a standard.

The B-MAC system has received favorable notices from an FCC industry advisory committee and from the Direct Broadcast Satellite Association (which recently merged with SPACE to form SBCA, the Satellite Broadcasting and Communications Association). In response to the introduction of the Satellite Television Fair Marketing Act in Congress, the SBCA announced that it strongly opposes the section of the bill that calls for an FCC-mandated encryption standard, claiming that it might "severely limit innovation, and hinder, rather than help the satellite dish industry." If the FCC set a standard today, it would almost certainly choose the VideoCipher II. The SBCA argues that setting a standard today would be premature, blocking the way for B-MAC or other scrambling technologies that could prove to be superior. ■

Send your questions about satellite television to: Satellite Adviser, P.O. Box 53, Boise, Idaho 83707.

Satellite Orbit
TV Guide
July 87

FCC
VC II de facto
standard

Satellite Orbit TV Guide - April 1987 Pg 52

inventors. By sending incorrect codes to the test address, GI deactivated decoders with the European chip and they are now useless.

Whether modified with a "clone," "three musketeers," or European chip, these illegal descramblers don't always work as they are supposed to. In addition, several scams have occurred in which a VideoCipher owner has sent the decoder module away to be modified and has never seen it again. In dealing with companies that offer such devices, you effectively strip yourself of the protection of the law. Simply opening the VideoCipher module voids the unit's warranty. If the device doesn't work, you must pay for the repair or replacement. If it does work, you must live with the fact that GI is actively seeking you out and, if it succeeds, will deactivate the "black box." More than that, GI may prosecute.

WHAT ABOUT THE LAW?

On January 7, General Instrument and HBO filed suit against a distributor of pirate chips in Phoenix.

chips to receive unauthorized programming is in violation of section 705 of the Communications Act of 1934, and is subject to a fine of up to \$1,000 and six months in jail.

General Instrument claims that it has the security tools necessary to deactivate all unauthorized decoders to date. Programmers that rely on VideoCipher technology to secure their programming support GI wholeheartedly, and have faith that the situation will soon be cleared up. Some industry observers, however, have interpreted GI's delay in deactivating these bootleg units as a sign of uncertainty regarding the VideoCipher II descrambling system. Nonetheless, the Federal Communications Commission in February declared that the VC II is the de facto decoder standard for the nation. (For more on GI's latest decoder, see page 45. For more on the FCC, see page 12.)

modules?

McCabe: By the end of February we should be at 100 percent production on the II Plus.

TVRO Dealer: So, what kind of stockpile will you have? In the car world, they keep parts around for 10 years after production ceases. What are you going to do with the VC II modules?

McCabe: That would be a question for Dick Armstrong, who is in charge of our service and repair center and who could answer it better than I. We have an obligation, obviously, to have sufficient quantities based upon whatever failure rates we have had since January 1986. We want to assure the customer who does not want to upgrade that they will have the ability to get a VC II module as a replacement.

TVRO Dealer: When will the Videopal be available in the II Plus module?

McCabe: That has been referred to as MOM, modem on module. It is not a term we are using internally, but I guess that is the term that the industry will use from now on. MOM is a system that we will probably see introduced, I would suspect, by the fall of 1990. We may see it at Nashville in July but I doubt very much that we will be shipping any of those units until this fall.

TVRO Dealer: Dealers' customers probably will be wondering if they should wait for MOM instead of buying a Videopal now for their existing VC II.

McCabe: A stand-alone Videopal is \$129, suggested retail price, but there is about \$80 worth of free programming that is tossed in by the pay-per-view programmer when the customer buys a Videopal. So, if you net out the programming, the cost of that Videopal is \$49 to the retail customer. While we haven't established any firm pricing on it, one could anticipate that a modem on module or MOM VC II Plus will be more expensive than just simply a VC II Plus module.

TVRO Dealer: The greatest percentage of existing VC II modules

have software levels that would allow the use of Videopal. What is going to be the cost? It was said to be \$89 if somebody wants to upgrade to a software level of 3.0 or higher to make it Videopal-compatible.

McCabe: It's best to clarify the compatibility with the Videopal. The earliest M/A Com unit shipped in '86 and '87 was software versions 2.4 and 2.6. Anything below a 3.0 software version does not work with the Videopal but of all the VC II modules ever built, the vast majority of them are compatible with Videopal.

TVRO Dealer: Is there a program set up so that consumers who have bought a Videopal will get credit

"The customer who does not want to upgrade ... will have the ability to get a VC II module as a replacement."

towards a VC II module? What is it going to cost them to exchange their old II for a II Plus?

McCabe: Well the swap out, if the customer has a software version of below 3.0, is \$89 to the consumer who has a Videopal. The cost of a II Plus upgrade is \$129.

TVRO Dealer: If they are buying a Videopal, it is not going to cost them less than \$129 in a swap out for a VC II Plus?

McCabe: No, as long as it is a module that has not been tampered with that comes in. It can be working or not, by the way. If the battery has died or if it has some bad circuitry that has caused the battery to drain, as long as the VC II unit is in untampered condition and the customer wants to upgrade, it is \$129 to go a II Plus.

TVRO Dealer: The dealer is going to

have to be involved in doing the swap outs. Is there going to be any compensation by General Instrument?

McCabe: There are no plans on that. Well, we do compensate the dealer on our IRDs for service calls; called our Service Trip Compensation Program, where a dealer is paid for a trip charge. By and large, I guess we have looked at service as an area where most dealers in the country seem to set their own level. Some charge for a trip in or out of warranty, others get a free trip while it is in warranty and they charge \$40-\$50, some customers install their own system and just have the dealer come out and check it. So it is difficult to have a program on compensation.

TVRO Dealer: Will the consumers be able to just mail a VC II module themselves to GI and let their IRD run without any programming until they get their new VC II Plus?

McCabe: Yes.

TVRO Dealer: That will be a big help for those consumers who are not serviced by one of the authorized VideoCipher Module Service Dealers.

McCabe: I think also what will help are the 40-45 full-time people managing our technical hotline in North Carolina. That operation has been in place now for four years and they still average between 12,000-18,000 phone calls a month. They have really gotten it down to a science of helping customers work through problems. We know there will be those consumers who will want to do the module swap themselves and will probably end up calling our hotline or Channel Master.

TVRO Dealer: What is that hotline number?

McCabe: 1-800-344-6754.

McCabe: The hotline is designed for advice or information on General Instrument hook-ups. But we have done it for so long that we literally handle anything on the hotline, even programming questions or questions about competitive products.

TVRO Dealer: What about VC II modules that are labeled as products of
Please turn to page 30

of VideoCipher II equipment these days. Demand is running 50% ahead of supply, and will stay that way until the General gets around to increasing its output.

General Instrument stumbled into this dominant position almost by accident. The company had managed to lose \$80 million on \$788 million in sales last year. But by February 1986 it had decided to shed a moneylosing semiconductor division and, emerging from two painful restructuring moves in two years, was looking for an acquisition in order to rebuild.

The VideoCipher technology was developed by M/A-Com, a Massachusetts company that spent over \$20 million creating it and then began taking on water in early 1986, as the satellite TV industry did the same. Among those M/A-Com beat out in the scrambler development derby was General Instrument, which realized its competitor was in severe financial trouble. The General paid \$220 million for M/A-Com's San Diego-based VideoCipher division, as well as for a profitable subsidiary that made coaxial cable for cable TV systems.

time. General Instrument pulled off one of the greatest coups of all time. The [decoder] business is like an annuity," says Aristide J. Vitolo, senior technology analyst at Cyrus J. Lawrence. Vitolo estimates that General Instrument should grow over 30% in the coming year.

Wall Street has noticed. General Instrument shares, 16 late last year, hit 36% on May 8 this year, and were recently around 33. But Joseph J. Bellace, telecommunications analyst at Merrill Lynch, says there's likely more room in the stock, because most of its runup reflects the strong market for cable TV equipment. "Cable is producing the big earnings right now, but there's no question the most rapid growth in the future will be in the home satellite market," says Bellace.

General Instrument, in any case, has no intention of sharing its windfall. M/A-Com had also licensed Channel Master, a North Carolina manufacturer, to make VideoCipher units, but General Instrument has so far refused to license any others. J. Lawrence Dunham, executive vice president and general manager of

vision, says the company is now opening a second plant in Mexico to increase production from 50,000 to over 100,000 units a month.

One reason is the electrifying profit margins on the VideoCipher II, which run over 35%. It costs about \$200 to manufacture, including overhead and marketing, and sells as fast as General Instrument can produce it for \$325 a unit. General Instrument also produces an integrated component decoder, which is built into satellite systems manufactured by other companies. It costs about \$150 per unit, with nearly as high a margin.

That said, a couple of cautions are in order. At least until a new generation of higher-powered satellites arrives a decade from now, satellite TV dishes won't be cheap enough to achieve the kind of mass market that, say, VCRs have won. And General Instrument's management was hardly impressive under the fire of competition.

But there aren't many market monopolies or near-monopolies left these days. And for a couple of years at least, the General seems to be holding some fairly secure high ground. ■

we should include

FORBES, JUNE 29, 1987

39

VC Shortage Slows Scrambling

The scrambling plans of several major programming networks continued to be stalled by the growing shortage of VideoCipher II commercial decoders, according to industry executives.

The timetables of many networks, including ESPN, the MTV Networks, USA Network, and CBN Cable, have been pushed back once again due to the shortage.

MTV, for example which at one time planned to scramble in July 1986, would now shoot for December 1987.

However, the Disney Channel, which continues to delay the implementation of scrambling is said to have all its headend units in place and could throw the encryption switch at any time. Disney now plans to scramble later this year. (For a complete scrambling timetable, see page 7.)

Industry sources said MTV was planning an announcement at the National Cable Television Association Show in Las Vegas concerning a simultaneous switch of its services (along with other Viacom International Inc. channels) to Galaxy 3 and the implementation of scrambling. (A simultaneous unscrambled feed of the services would continue to be transmitted during a phase-in period.)

MTV executives would not comment on the possible announcement. But when asked about the scrambling date, one executive said, "We have affiliates who have had their (decoder) orders in (since) last December who still haven't taken delivery. It's a joke."

ESPN recently announced it planned to scramble on June 22 (see separate story, page 3). In August of last year, ESPN said it planned to scramble by the first quarter of 1987.

The commercial VideoCipher shortage is best illustrated by the situation of Anixter Brothers Communications Inc., the Chicago-area firm generally believed to be the biggest equipment distributor in the industry.

Industry sources said Anixter's back order for commercial VideoCiphers has now surpassed 12,000, with the company not expected to be caught-up until this fall. At press time, sources said they company was out of stock on the units and awaiting a shipment from General Instrument Corp. (GI).

GI, in a recent letter to the Satellite Broadcasting and Communications Association (SBCA) said, that approximately 124,000 commercial units were needed by April 30 and "we have built about 136,000 units..." The company said it has averaged about 8,000 units per month since last January, a rate it planned to continue "through the summer."

One problem faced by GI in attempting to meet the demand for the commercial units is that they, unlike their consumer brethren, require two VideoCipher decoder modules to be built into each unit.

GI also charged its production projections were being "distorted" by programmers who "far underestimated the number of decoders needed" and "large blanket orders."

Told of GI's comments, one programming executive said GI has "over promised" what it could produce in the past and has reacted to the shortage by charging "raping prices" for the commercial decoders. GI did raise the price of the units last fall, from \$495 to \$595 for a single order.

Ironically enough, many in the TVRO industry are as equally upset about the shortage of commercial decoders and the slowdown in scrambling plans, arguing that TVRO packaging on a widespread basis cannot take place until a critical mass of programmers scramble. ■

NEWS

➤ **General Instrument's VideoCipher** Division is shipping its VideoCipher II Plus descrambler modules that are covered by its Consumer Security Protection Program. Under the program, during the first three years of ownership, eligible, subscribing consumers will be protected against any migration to a new version of VideoCipher II Plus technology required by cable/satellite programmers.

➤ **Magnavox CATV Systems** and **Jones Intercable** will install Magnavox's AXIS addressable external interdiction system on a limited test basis in Jones' Albuquerque, N.M., system before the end of this month. In other news, Magnavox was chosen by **Colony Communications** and **Palmer Cablevision** to supply more than 1,000 miles of fiber-optic and cable distribution equipment to system locations in

patents. MAAST is owned by Robert Block, who was responsible for the development of the basic systems that form the foundation of PPV and IPPV for applications including cable and satellite transmissions. In other news, S-A will provide training to **Contec International's** personnel for the repair of S-A addressable and non-addressable converters that are post-warranty.

➤ **Mind Extension Institute** is offering operators free, in-office demonstrations of its *Installer Training* and *General Safety* interactive video technical training programs. Call (800) 833-3472 for reservations.

➤ **United Artists Cable** unveiled its new Evaluation Engineering Lab in Denver, which combines equipment from United Cable's Denver and UA's New Jersey evaluation labs to allow testing of a wide variety of vendor

cable digital compression system. Cablevision will use selected subscribers in its Long Island and Bronx/Brooklyn, N.Y., systems for the test later this year.

➤ **Zenith Electronics** will offer low-cost addressable pay-per-view cable decoders for the **NBC** and **Cablevision Olympics TripleCast** in 1992. The Pay-Master is a small add-on decoder that's compatible with most non-addressable cable converters.

➤ **SecaGraphics** and **CableData** are scheduled to begin beta testing SecaGraphics' Outage and Vehicle Location system this month. This follows an announcement made last fall to initially market OVL exclusively to CableData customers.

➤ According to a report by **Donaldson, Lufkin & Jenrette Securities Corp.**, global demand for fiber

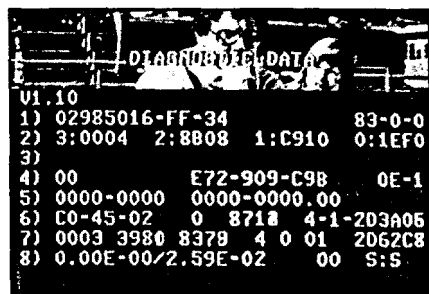
| | | | | | | | | | |
|-------------------|--------|---------------------|-------------------|-----------------------|-----------------|--------|----------------|----------------------|--------|
| Bentley, Bill | KB5HOX | Times Mirror | Midland, Texas | HF,VHF,UHF, SSB,CW | Capron, John | WB2RUQ | Philips | Manlius, N.Y. | |
| Beuret, Kit | KH6JDE | ATC | Honolulu, Hawaii | | Carey, Bill | KC4BPK | ATC | Fayetteville, N.C. | |
| Blackstone, Larry | W8FZ | Dantron | Milton, Fla. | SSB/CW,80M-10M | Carr, Mike | N4PON | Paragon | St. Petersburg, Fla. | 2FM |
| Blanchard, David | KA0HIB | Municipal Utilities | Coon Rapids, Iowa | CW,SSB,QRP,2FM | Carr, Peter | WB3BQO | Montague Cable | Montague, N.J. | |
| Blumberg, David | N1HHI | ACS | Manchester, N.H. | | Carvis, Timothy | WB9ULP | NYT Cable TV | Cherry Hill, N.J. | 2M,440 |
| | | | | | Cerino, Charles | WB3HVV | Comcast | Philadelphia, Pa. | FM |

ALL THOSE NUMBERS

Can you tell me what happened to the show "Airwolf" that used to be on S3, 15, Monday through Friday at 6:00 pm? And, I also would like to know if there are any French music videos on any other C-band satellites? I do not have Ku-band. Do I have to buy the equipment to receive Ku-band transmissions? And, I would appreciate it if you could tell me what the numbers on the diagnostic screen of a Tracker VIII+ with VC II Plus means. Let me congratulate you on an excellent magazine. It is neat and organized and I wouldn't change to any other magazine.

David S.,
Potomac, MD

Apparently KTLA has made a schedule change and replaced "Airwolf" with "Knight Rider" reruns. This usually happens when a station has shown all of a series' episodes and wants to shift gears and offer something different for a while in their afternoon slots. For French music videos (if there are any), your best bet will be some of the networks on Anik D1 and D2, such as CBC French feed on D1, 15 and TV-5 on D2, 17.



For VC II Plus, here's what our screen reads line-by-line, left-to-right. VC II Plus displays decimal numbers, hexadecimal numbers (A=11, B=12,...F=16), and binary numbers (01=1, 10=2, 11=3).

V1.10 means the VC module is version 1.10.

Line 1). 02985016-FF-34 is our VC module's code name in a version 1.10 format. 83-0-0 is a VIDEOpal field. Ones and zeros appearing in this field are related to pay-per-view and pay-per-view tiers.

Line 2). All fields are related to VideoCipher tiers (broadcasting tiers).

Line 3). All fields on this line have been turned off.

Line 4). 00, E72-909-C9B, and 0E-1 are codes for our location, standard time zone, and whether or not daylight

savings time is observed here. It is.

Line 5). These fields are for use by VideoCipher experts.

Line 6). C0-45-02 is a code related to subscription broadcasters (Showtime et. al.). 8718 is a fast counter. It will reset to 0000 like the counters on line 7. Resetting counters does not affect the VC module, nor its self-diagnostics, in any way. 4-1-2D3A06 is a sync detector, a broadcast counter, and a timer for the broadcast in frame-count time.

Line 7). 0003 and 3980 are incoming message counters that can be reset to 0000 by touching the remote controller's zero key. 8378 is called the "good frame" counter. It's a continuous measurement of the quality of the signal being received by the VC module via the IRD. It will be reset to 0000 when the other counters are reset. 4, 0, 01, and the black space after 01 are related to the broadcast (not a VC broadcast, not authorized, locked out, free preview, etc.). 2D62C8 is a frame-count time code for the broadcast's ending.

Line 8). 0.00E-00/2.59E-02 are 5-second/45-second bit error values, which are measures of the quality of the bit stream being received. We purposely caused 2.59E-02 to appear. It is normally 0.00E-00, a value which attests to the high quality of the satellite-delivered VideoCipher bit streams. The next field, 00, is called "audio

holds," and is a measure of error-free decoding of the bit stream by the VC module. Hopefully, this field will be nothing other than 00. The last field, S:S, is two-in-one. Before the colon, F should appear during those fixed-key unsecure VC broadcasts. P should appear during in-the-clear broadcasts. And, during those super-secure VC broadcasts, an S should appear. After the colon, there can be 12 different symbols ranging from a simple S (authorized to watch) to CB (broadcast is blacked out in your area), depending on what the broadcast contains and what time it is in your area.

STARLESS

May I ask what happened to Star TV Network? This program was on S1, 13. Now it does not come on any channel. Can you tell me why? This was my favorite channel.

Daniel Jaison,
Winter Haven, FL

Unfortunately, the Star Television Network, formerly on S1,13, has gone off the air because of financial reasons. The network is not expected to return.

Letters to Mailbag should be addressed to OnSat Mailbag, P.O. Box 2347, Shelby, NC 28151-2347. You should include your name, address, and home telephone number. Letter may be edited for purposes of clarity or space. Sorry, but we are not able to send you a personal response.

DR. DISH

by Richard Maddox

Dear Dr. Dish:

I have a Channel Master block receiver and my problem is that my neighbor is picking up my audio and a ghost image off some of my transponders. His antenna is 200 yards to the south of my house, yet two other neighbors only 50 and 100 yards away have no interference at all. My neighbor has mentioned an FCC regulation and a lawsuit. Our technician has no idea what the problem could be. HELP!

Charles Safford,
Port Allegany, PA

It sounds like you are transmitting your channel 3 satellite receiver's output into your neighbor's TV system. To see if this is the case, talk with your neighbor and have him watch his reception while you tune to the channel that is giving the most interference.

While he watches, disconnect your

To TV cable (channel 3/4 output) from your receiver. If your neighbor's problem disappears, then the fault lies in how your TV system is wired.

Most likely your satellite receiver's output is improperly connected to a splitter or A/B switch which is sending your satellite signal to your TV antenna. I've seen people install a two-way splitter "backwards" to combine their TV antenna with their satellite receiver. This is a definite no-no and a definite source of a radiation problem.

When using channel 3 to carry satellite signals, you must always use round coax cable rather than flat twin lead since this can also radiate your signal.

Hopefully, this will solve your problem so your neighbor won't need to take you to "People's Court."

See More Dr. Dish on page 87

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